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REMARKS

Claims 1-40 were pending as of the May 19, 2006 office action. Claims 35-36 have been canceled. Claims 1-3, 5, 10-11, 20, and 29-30 have been amended; no new matter was added. Claims 1-34, and 37-40 are pending, of which claims 1 and 20 have independent form.

Claims 27-28 and 35-36 are objected to for allegedly repeating the same limitations.

Claims 1-40 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter.

Claims 20-40 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter.

Claims 1-40 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Publication No. 2002/0156772 ("Chau").

The applicant respectfully requests reconsideration in view of the amendments and the following remarks.

Objections

Claims 27-28 and 35-36 are objected to as repeating the "exact same limitations." The applicant notes that claims 27 and 35 are not identical, however to expedite prosecution claims 35 and 36 have been canceled without disclaiming the subject matter disclosed therein.

Section 101 Rejections

Claims 1-40 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. The examiner asserts that the "actions being performed in these claims do not provide any tangible results." Office Action of May 19, 2006, p. 3. The applicant has amended claims 1 and 20 to expedite prosecution. Notwithstanding the amendment, the applicant respectfully reminds the examiner that under the holding of *State Street Bank & Trust Company v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998), "numbers" are deemed to be tangible results. Therefore, "logical elements" satisfying an XPath expression are also tangible results.

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Claims 20-40 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. The examiner asserts that "it is unclear whether these computer readable program instructions are stored on a computer readable storage medium." The applicant respectfully submits that the examiner is wrong, as the quoted language clearly states that the program instructions are computer readable. However, to expedite prosecution, claim 20 has been amended to use the model language of MPEP § 2106(IV)(B)(1). Support in the specification is found, for example, on page 8. "The invention can be implemented as a computer program product, i.e., a computer program tangibly embodied in ... a machine-readable storage device."

The remaining claims depend from claims 1 or 20.

Section 102 Rejections

Claims 1-40 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Chau.

Claim 1 recites, in part, "providing a representation of an XML document instance containing two or more logical elements, wherein at least one logical element is a parent node and at least one logical element is a child node in a hierarchical tree structure describing the representation."

To reiterate, claim 1 recites "providing a representation of an XML document instance." The examiner has pointed to the XPath feature of Chau, but XPath fails to meet the recited feature. The very text quoted by the examiner states that XPath addresses only a part of an XML document. Chau states, "XPath addresses parts of an XML document." ¶ 0042. Similarly, the application states that XPath expressions address subsets of XML documents. Application, p. 2. Thus, an XPath is not "a representation of an [XML] document instance." (In Chau, XPaths are not used to represent XML documents. Rather, the XML documents are decomposed and stored in their native format in a SQL database. ¶¶ 0227, 297.)

To reiterate, the claim also recites "a hierarchical tree structure describing the representation." An XPath is not a hierarchical tree structure. Chau clearly states that an XPath is a "descending chain," not a hierarchical tree structure. ¶ 0112. Nothing else in Chau was identified by the examiner as meeting this feature.

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Claim 1 further recites, in part, "searching in the hierarchical tree structure only nodes that potentially have child nodes satisfying the XPath expression."

The examiner relies upon ¶¶ 0335-36, 0112, and 0679 of Chau for these features. These paragraphs are in reference to a "side table" feature described by Chau, wherein certain XML documents can be decomposed into tables ("side tables") stored in a SQL database. Thus, queries on XML documents can be transformed into queries on SQL tables, which are fast when the SQL tables are indexed. Chau further discloses that the side tables can have "parent-children" relationships. ¶ 0335.

The disclosure of side tables, however, fails to disclose the recited feature. The relied upon paragraphs do not show that SQL side tables are a hierarchical tree structure. As the examiner has not shown the "hierarchical tree structure" feature in any of the relied-upon paragraphs, a prima facie case of anticipation has not been made.

Even if Chau's remark about the side tables having "parent-children" relationships did mean that the side tables constituted nodes in a hierarchical tree structure (the applicant submits that Chau's remark does not mean this), the recited feature would not be met. If side tables constituted nodes, then meeting the recited feature would require searching only the side tables "that potentially have child [side tables] satisfying the XPath expression." The relied upon paragraphs say nothing about selectively choosing to search or not search a given side table. Thus the side tables fail to meet the recited feature.

The examiner additionally commented, "Examiner interprets that every node in this reference has a potential child nodes." The applicant respectfully reminds the examiner that this fails to constitute taking official notice under MPEP § 2144.03. The examiner is requested to clarify what is intended by a "node."

Claim 1 is therefore allowable. Claims 2-19 depend from claim 1 and are therefore allowable. Claim 20 contains similar limitations, and claims 21-34 and 37-40 depend from claim 20. Therefore, claims 20-34 and 37-40 are also allowable.

Claim 2 depends from claim 1 and recites in part, "including the further step of generating a collection of parent nodes that potentially have child nodes satisfying the XPath

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expression from a table relating a class of parent nodes and a class of child nodes, and wherein the table is used in the searching step."

The examiner relies upon ¶ 0164 in Chau, which describes storing all the attribute and child element data of a root node. Even if this data did constitute a collection, the collection would concern child elements. The claim recites "a collection of parent nodes." Further, ¶ 0164 says nothing about whether the parent nodes potentially have child nodes satisfying an XPath expression. In fact ¶ 0164 says nothing about XPath whatsoever. Additionally, the claim recites that the collection is generated from a table relating a class of parent nodes and a class of child nodes, and ¶ 0164 says nothing about any kind of table, especially a table relating a class of parent nodes and a class of child nodes. Lastly, as addressed above, Chau does not disclose searching which meets the limitation of claim 1. Therefore, ¶ 0164 of Chau does not disclose that "the table is used in the searching step," as recited in claim 2.

The examiner also relies upon ¶ 0176 of Chau, which reads in context:

[0175] element_node

[0176] Representing an XML element. It must be defined in the specified DTD. For the RDB_node mapping, the root element_node must have a RDB_node to specify all tables containing XML data for itself and all its children nodes. It can have zero or more attribute_nodes and child element_nodes, as well as zero or one text_node. In the next release, an element_node can also contain namespace nodes, process_instruction_nodes and comment_node.

Much of the same reasoning applies. ¶ 0176 says nothing about XPath, and ¶ 0176 says nothing about generating a collection. Similarly, ¶ 0176 does not disclose that "the table is used in the searching step," as recited in claim 2.

Claim 2 is thus allowable. Claims 3 and 21-22 contain similar limitations and are therefore also allowable.

Claim 4 depends from claim 2 and recites in part, "wherein the table comprises entries containing hash representations of a class of parent nodes and a class of child nodes." Claim 5 also depends from claim 2 and recites in part, "wherein the table comprises entries containing hash representations of the parent nodes and child nodes."

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The examiner relies upon a "levelmap" described in ¶ 0699 of Chau to purportedly find the tables recited in claims 4 and 5. That is, the examiner asserts that in claims 4 and 5, the recited "table" is met by Chau's "levelmap." By contrast, in claim 2, the examiner asserts that the recited "table" is met by something else. The applicant is not certain of the Chau feature which the examiner identifies as the table in claim 2. The applicant is certain, however, that the Chau feature relied upon in claim 2 is not a Chau "levelmap," as neither ¶ 0164 nor ¶ 0176 contains the word "levelmap." Thus, for claim 2 and for claim 5, the examiner finds two distinct features in Chau for the recited "table" feature.

Claim 5 depends from claim 2 and thus incorporates the features of claim 2. The antecedent basis for "the table" in claim 5 is in claim 2. Therefore, in claim 5, the same recited "table" feature is purportedly met by two different aspects of Chau. The examiner has not consistently identified where in Chau the "table" feature is found, and thus has not made out a prima facie case of anticipation.

Additionally, Claim 4 recites in part, "entries containing hash representations of a class of parent nodes and a class of child nodes." Claim 5 by contrast recites in part, "entries containing hash representations of the parent nodes and child nodes." That is, while claim 4 recites that the hash representations are of "a class of parent nodes" and "a class of child nodes," claim 5 recites that the hash representations are of "parent nodes" and "child nodes."

However, the examiner has not distinguished claims 4 and 5 in purporting to find the limitations in Chau. The examiner, in effect, asserts that the hash representations of claims 4 and 5, which are clearly different, are met by the same feature in Chau. This contradiction means that for a second reason the examiner has not made out a prima facie case of anticipation.

The examiner looks to ¶ 0699 in Chau to find XML parent nodes and XML child nodes or an XML class of parent nodes and an XML class of child nodes. The examiner asserts that the "relational levels" describe XML parent-child relationships, with the "ascending order of relational levels [having] one-to-many relationship[s] between ... adjacent classes with the 'many' side at the upper level." However, Chau states clearly that the relational levels do not correspond to XML parent-child relationships. "An XML document also has a tree structure that

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consists of elements at different levels in the tree. Unfortunately, these levels do not necessarily match the levels in the relational model.” ¶ 0691. Thus, ¶ 0699 fails to meet the recited features.

Lastly, for claims 4 and 5, the examiner also relies on ¶ 0941 to find XML parent nodes and XML child nodes or an XML class of parent nodes and an XML class of child nodes. The examiner specifically relies on the phrase which says, “Create a hash table or sorted array of all top_elements rel->top_elements for fast search.” This phrase is from a comment in what appears to be C or C++ code. The applicant understands this to mean that in the C or C++ code which this phrase is from, the top elements are assembled into an array. In the code, it appears that the top elements are extracted from the “rel” data structure. This phrase is inadequate to anticipate claims 4 and 5, because claims 4 and 5 recite “parent nodes” and “child nodes” and the relied upon text merely says “top elements.” Thus, ¶ 0941 does not disclose all claim limitations.

Claims 4 and 5 are therefore allowable. Claims 23 and 24 contain similar limitations and are therefore also allowable.

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Conclusion

The applicant respectfully requests that all pending claims be allowed.

By responding in the foregoing remarks only to particular positions taken by the examiner, the applicant does not acquiesce with other positions that have not been explicitly addressed. In addition, the applicant's arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

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Respectfully submitted,

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